

REMARKSRejections under 35 U.S.C. § 103(a)

Claims 1, 3-5, 7-9 and 11-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Emoto et al. (U.S. Patent No. 5,572,443) (hereinafter “Emoto”) in view of McKinney et al. (U.S. Patent No. 7,209,796) (hereinafter “McKinney”). Claims 2 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Emoto in view of McKinney in further view of Moriya et al. (JP 07020896) (hereinafter “Moriya”). Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Emoto in view of McKinney in further view of Hosoi (U.S. Patent No. 5,754,665) (hereinafter “Hosoi”). The rejections in the Office Action are respectfully traversed for at least the following reasons.

Applicant respectfully submits that in the Emoto and McKinney references, “a characteristic dividing device,” “a characteristic dividing process,” and “a characteristic dividing section” as described in the instant application are not disclosed, nor even suggested, to any extent. Applicant respectfully submits that Emoto merely discloses a signal level-time plane in Fig. 9c and a signal level-frequency plane in Fig. 9d together with division along its frequency axis. However, Applicant respectfully submits that no frequency-time plane and no division along its time axis are disclosed, to any extent, in Emoto.

Applicant respectfully submits that McKinney discloses a frequency-time plane for “Respiratory Sounds,” but not for an impulse as described in the instant application. Applicant notes that McKinney discloses an “enclosed portion” shaped like an ellipse in Fig. 5 which is depicted by “freehand drawing a line” according to its specification, column 7, line 43. However, Applicant respectfully submits that there is no disclosure, nor even a suggestion,

regarding division along its frequency axis and/or along its time axis, as illustrated, for example, in Fig. 5 of the instant application.

Applicant respectfully submits that this “characteristic dividing device (including process and section)” demonstrates the following particular effects. It is evaluated in a system according to the disclosure of the instant application in which a contribution to a sense of spaciousness is the same with respect to every block on the time-frequency plane (i.e. the time/frequency division) when a reflected sound pattern is applied to any one of the blocks. Therefore, Applicant respectfully submits that when correction is carried out to obtain a certain sense of spaciousness, it is unnecessary to maintain all the same transmission characteristics with respect to the blocks, whereby a variety of solutions to the correction are obtainable.

Even further, as illustrated Figs. 6 and 7 of the instant application, a contribution to the sense of spaciousness is different with respect to each of the blocks. More particularly, Applicant respectfully submits that by applying a small reflected sound, the sense of spaciousness is increased. Applicant respectfully submits that in order to evaluate such the sense affected by both time and frequency, this characteristic dividing device is very important.

Applicant respectfully submits that a feature of embodiments of the present invention resides in a time/frequency division as illustrated in Fig. 5 and described in connection with Formula 4 of the instant application. Applicant notes that the evaluation value indicating a sense of spaciousness is calculated by (Formula 4 for example) using a weighted linear sum of a discrete energy distribution on the time/frequency plane as described at page 20, line 24 – page 21, line 3 of the specification of the instant application (paragraph [0091] of the published specification).

For example, Applicant respectfully submits that, as described at page 22, line 14 – page 23, line 5 of the specification of the instant application (paragraphs [0098] – [0100] of the published specification), by correcting a block having a large weight coefficient and greatly affecting the sense of spaciousness among the blocks, it is possible to make the sense of spaciousness closer to what aimed as the object of the present invention.

Further, Applicant respectfully submits that, as described at page 28, lines 4-9 of the specification of the instant application (paragraph [0120] of the published specification), since it is sufficient to control sound field block by block in use of the evaluation value shown in Formula (4), it is unnecessary to rigorously design a filter as in a conventional technique.

For at least the foregoing reasons, Applicant respectfully submits that new and prominent effects over the disclosures of the cited references, whether taken separately or in some combination together, are obtainable by the combination of features described in at least independent claim 1 of the instant application.

In the Office Action, the Examiner asserts that “a correcting device” according to the present invention is disclosed in Emoto at column 12, lines 49-55. However, Applicant respectfully submits that this cited portion of Emoto merely discloses an ordinary signal correction using a set FIR (equalizer) filter for improvement on response characteristic. In the present invention, the space characteristic deciding device decides a space characteristic based on the divided block data (e.g., the time/frequency division) and the correcting device corrects at least one sound source component for each of sound source components based on detected difference between the space characteristics.

Applicant respectfully submits that because Emoto does not treat such space characteristics, the set FIR (equalizer) filter cannot correct the signal on a space by space basis (i.e. a basis of time/frequency division). Therefore, Applicant respectfully submits that “(a) correcting device” is not disclosed, nor even suggested, in Emoto.

In the Office Action, the Examiner asserts that “a sound source synthesizing device” according to the present invention is disclosed in Emoto at column 27, lines 14-15 and column 27, lines 27-31. However, Applicant respectfully submits that this cited portion of Emoto merely discloses characteristic compensation but not synthesizing as in the present invention. Applicant respectfully submits that in the present invention, “synthesizing” means recombining the divided block data (e.g. time/frequency division) respectively corrected as disclosed in the specification of the instant application, for example, at page 12, lines 21-24 (paragraph [0043] of the published specification) as follows:

“The sound source synthesizing section 8 synthesizes a signal again for each frequency band where a reflected sound pattern is added to sound source components, and outputs the synthesized signal to an output apparatus OA.”

Accordingly, for at least the foregoing reasons, Applicant respectfully submits that Emoto does not teach, or even suggest all of the features of independent claim 1 of the instant application in the manner indicated by the Office Action. McKinney fails to cure the deficiencies of Emoto at least with regard to the above-discussed combination of features. The remaining independent claims 7, 8, 9, 12 and 13 include similar features as discussed above with regard to independent claim 1 of the instant application. Accordingly, Applicant respectfully

submits that similar arguments as discussed above with regard to independent claim 1 of the instant application also apply to the remaining independent claims 7, 8, 9, 12 and 13 of the instant application.

For at least the foregoing reasons, Applicant respectfully asserts that the rejections under 35 U.S.C. § 103(a) should be withdrawn because the applied art of record does not teach or suggest each feature of independent claims 1, 7, 8, 9, 12 and 13 of the instant application. MPEP § 2143.03 instructs that “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).”

The dependent claims are in condition for allowance at least because of their dependence from independent claims 1 or 9. Also, the additionally applied references to Moriya and Hosoi do not cure the deficiencies discussed above with regard to Emoto and McKinney.

CONCLUSION

In view of the foregoing, Applicant submits that the pending claims are in condition for allowance, and respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant’s undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including

any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573.

This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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Dated: March 17, 2008

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